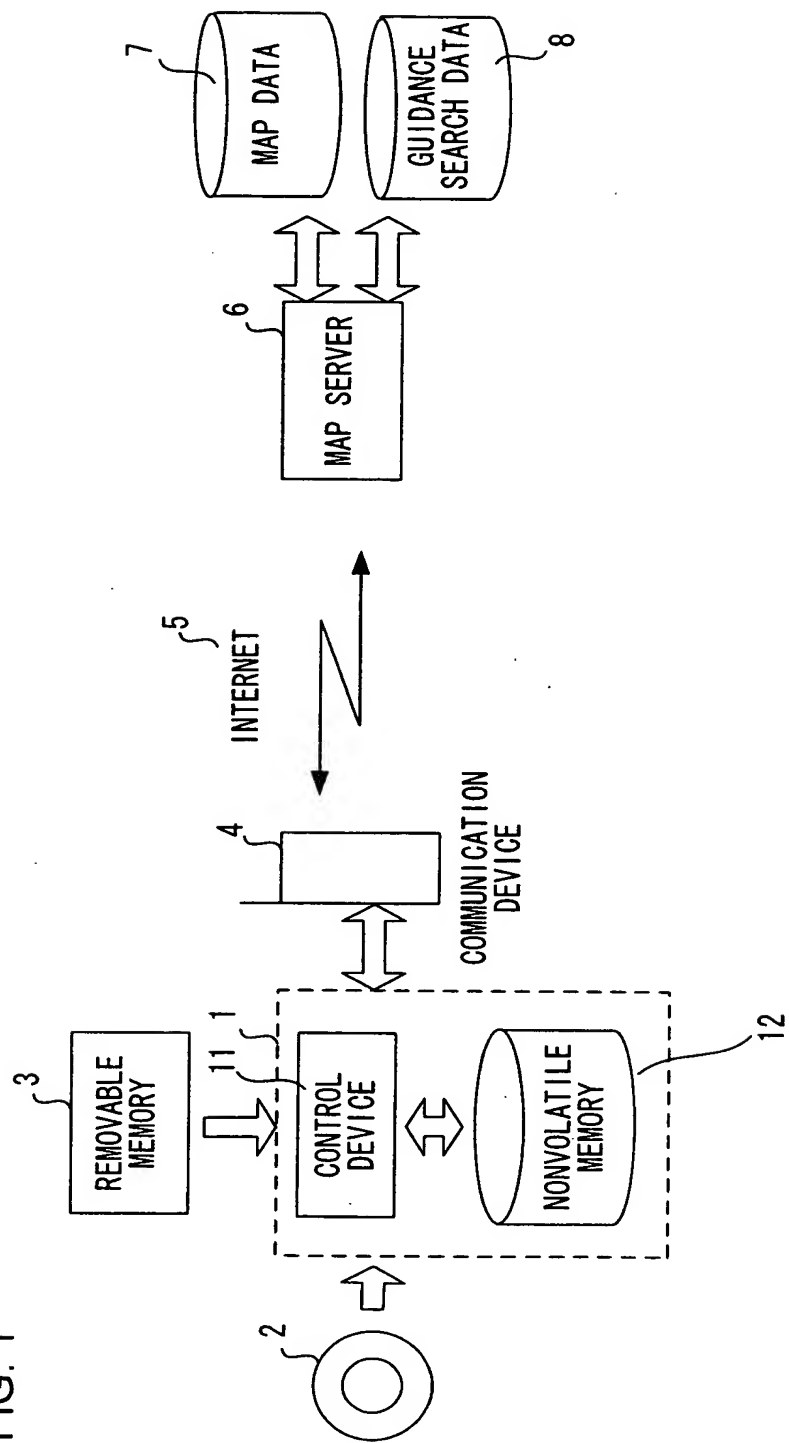


FIG. 1



2/16

FIG. 2

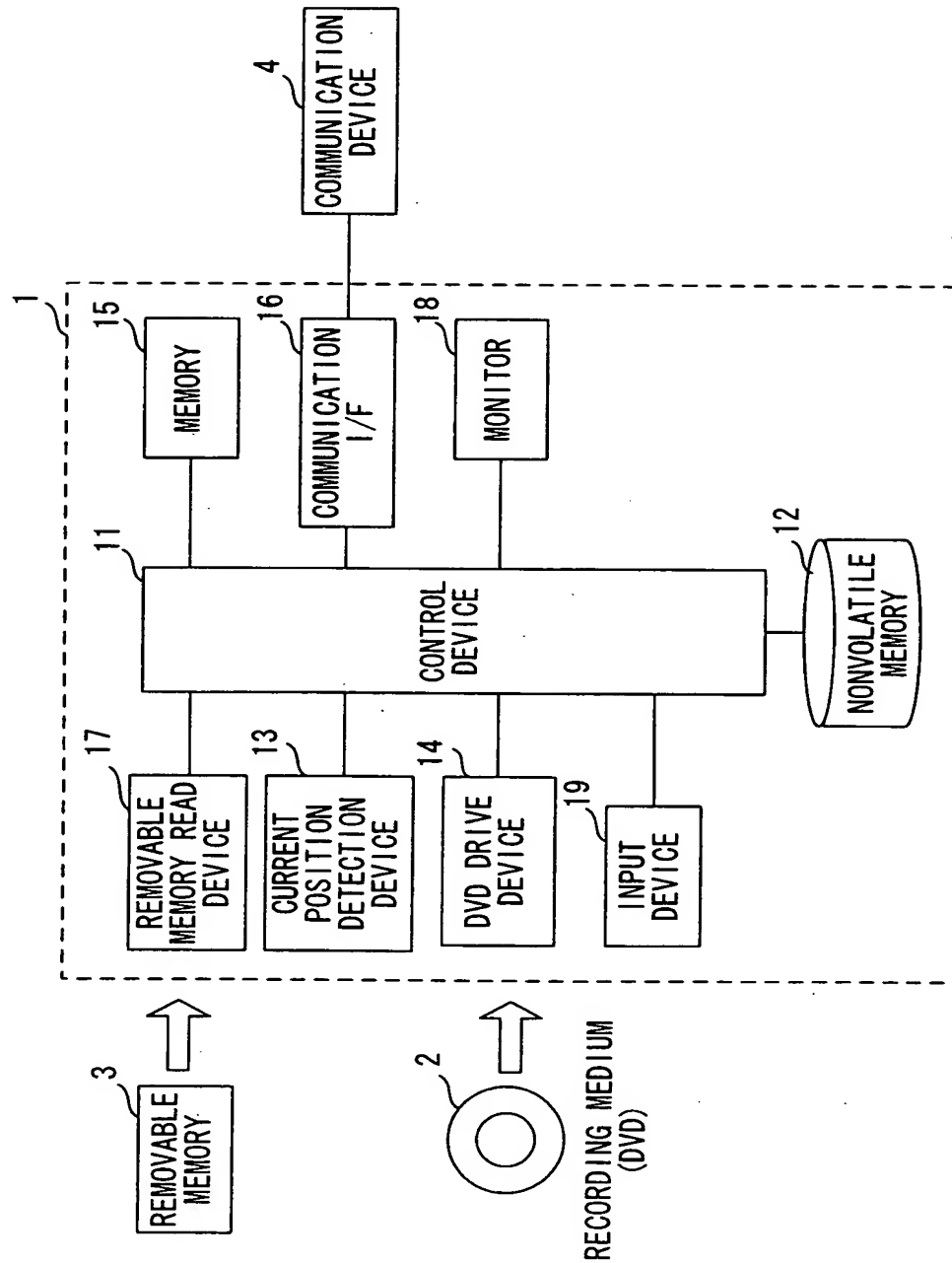


FIG. 3

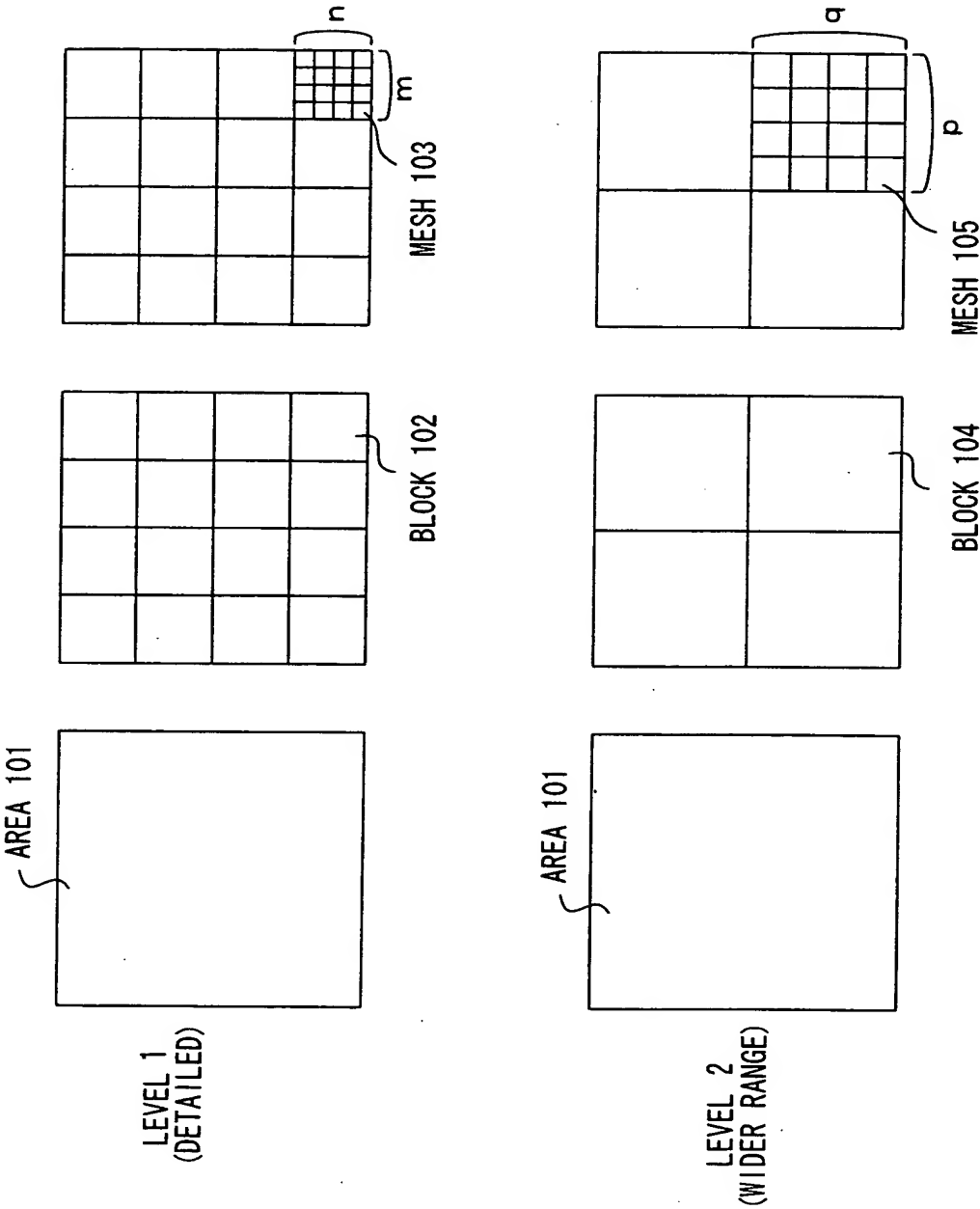
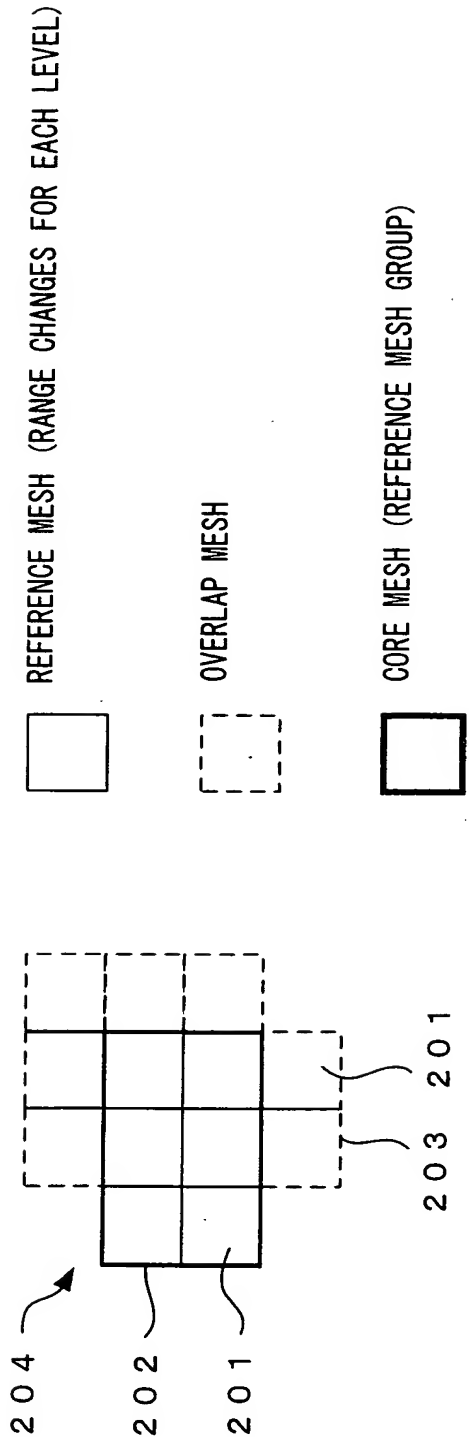


FIG.4

EXAMPLE OF CORE MESH FORMATION AND OVERLAP MESH ARRANGEMENT



5/16

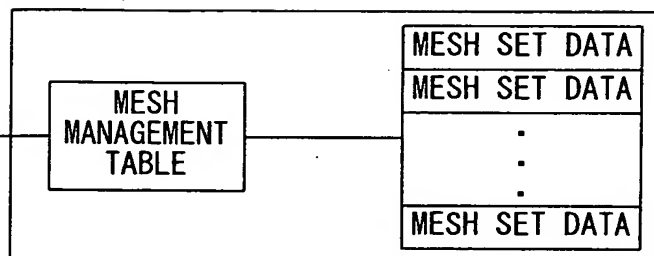
FIG.5

DATA AT LEVEL X

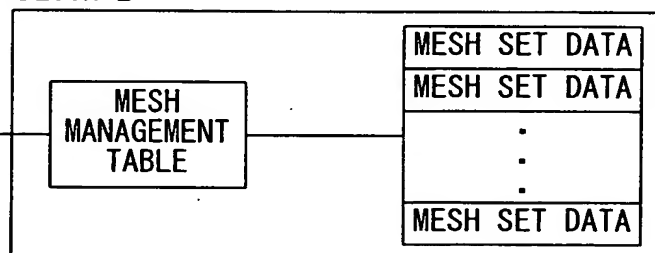
BLOCK MANAGEMENT TABLE

BLOCK 1
BLOCK 2
⋮
BLOCK n

BLOCK 1

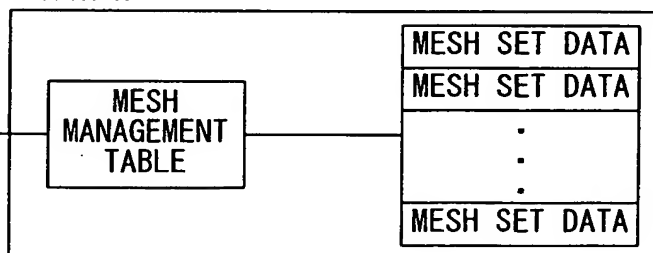


BLOCK 2



⋮

BLOCK n



6/16

FIG.6

BLOCK MANAGEMENT TABLE AT LEVEL 1

DATA #	DATA NAME	
1	BLOCK MANAGEMENT TABLE SIZE	
2	NUMBER OF SETS OF BLOCK MANAGEMENT INFORMATION	
3	BLOCK 1	UPPER END LATITUDE (PRIMARY LATITUDE MESH CODE)
4		LOWER END LATITUDE (PRIMARY LATITUDE MESH CODE)
5		LEFT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
6		RIGHT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
7		POINTER TO MESH MANAGEMENT TABLE
8	BLOCK 2	UPPER END LATITUDE (PRIMARY LATITUDE MESH CODE)
9		LOWER END LATITUDE (PRIMARY LATITUDE MESH CODE)
10		LEFT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
11		RIGHT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
12		POINTER TO MESH MANAGEMENT TABLE
13	BLOCK 3	UPPER END LATITUDE (PRIMARY LATITUDE MESH CODE)
14		LOWER END LATITUDE (PRIMARY LATITUDE MESH CODE)
15		LEFT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
16		RIGHT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
17		POINTER TO MESH MANAGEMENT TABLE
18	:	
19	BLOCK 16	UPPER END LATITUDE (PRIMARY LATITUDE MESH CODE)
20		LOWER END LATITUDE (PRIMARY LATITUDE MESH CODE)
21		LEFT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
22		RIGHT END LATITUDE (PRIMARY LONGITUDE MESH CODE)
23		POINTER TO MESH MANAGEMENT TABLE

FIG.7

7/16

MESH MANAGEMENT TABLE

1	MESH MANAGEMENT TABLE SIZE
2	NUMBER OF REFERENCE MESHES MANAGED ALONG LATITUDINAL DIRECTION
3	NUMBER OF REFERENCE MESHES MANAGED ALONG LONGITUDINAL DIRECTION
4	LOWER END LATITUDE (PRIMARY LATITUDE MESH CODE)
5	LEFT END LONGITUDE (FIRST ORDER MESH CODE)
6	FILE MANAGEMENT TABLE CLASSIFICATION
7	FILE MANAGEMENT TABLE

FIG.8

FILE MANAGEMENT TABLE CLASSIFICATION 1 (EXAMPLE)

1	LOWER- END LINE	MESH (MESH SET) DATA START POINTER	
2		LEFT END	RELATIVE NUMBER ASSIGNED TO LOWER LEFT REFERENCE MESH IN CORE MESH 4 bytes
3			NUMBER OF REFERENCE MESHES SET ALONG LATITUDINAL DIRECTION WITHIN CORE MESH 1 byte
4			NUMBER OF REFERENCE MESHES SET ALONG LONGITUDINAL DIRECTION WITHIN CORE MESH 1 byte
5			LATITUDE OF MESH SET AT LOWER END (RELATIVE NUMBER OF REFERENCE MESHES COUNTED FROM LOWER LEFT REFERENCE MESH IN CORE MESH) 1 byte
6			LONGITUDE OF MESH SET AT LEFT END (RELATIVE NUMBER OF REFERENCE MESHES COUNTED FROM LOWER LEFT REFERENCE MESH IN CORE MESH) 1 byte
7			NUMBER OF REFERENCE MESHES SET ALONG LATITUDINAL DIRECTION WITHIN MESH SET (RECTANGULAR AREA SIZE) 1 byte
8			NUMBER OF REFERENCE MESHES SET ALONG LONGITUDINAL DIRECTION WITHIN MESH SET (RECTANGULAR AREA SIZE) 1 byte
9			STORAGE LOCATION
10			CONNECTION / PARTIAL RESTRICTION MESH SET DATA SIZE
11			LEVEL CORRESPONDENCE MESH SET DATA SIZE
12		ADJA- CENT TO RIGHT	RELATIVE NUMBER ASSIGNED TO LOWER LEFT REFERENCE MESH IN CORE MESH 4 bytes
13			NUMBER OF REFERENCE MESHES SET ALONG LATITUDINAL DIRECTION WITHIN CORE MESH 1 byte
14			NUMBER OF REFERENCE MESHES SET ALONG LONGITUDINAL DIRECTION WITHIN CORE MESH 1 byte
15			LATITUDE OF MESH SET AT LOWER END (RELATIVE NUMBER OF REFERENCE MESHES COUNTED FROM LOWER LEFT REFERENCE MESH IN CORE MESH) 1 byte
16			LONGITUDE OF MESH SET AT LEFT END (RELATIVE NUMBER OF REFERENCE MESHES COUNTED FROM LOWER LEFT REFERENCE MESH IN CORE MESH) 1 byte
17			NUMBER OF REFERENCE MESHES SET ALONG LATITUDINAL DIRECTION WITHIN MESH SET (RECTANGULAR AREA SIZE) 1 byte
18			NUMBER OF REFERENCE MESHES SET ALONG LONGITUDINAL DIRECTION WITHIN MESH SET (RECTANGULAR AREA SIZE) 1 byte
19			STORAGE LOCATION
20			CONNECTION / PARTIAL RESTRICTION MESH SET DATA SIZE
21			LEVEL CORRESPONDENCE MESH SET DATA SIZE
22			:

FIG.9

8/16

MESH SET DATA

1	NUMBER OF REFERENCE MESHES
2	OFFSETS TO AND SIZES OF REFERENCE MESH DATA
3	REFERENCE MESH DATA 1
4	REFERENCE MESH DATA 2
5	REFERENCE MESH DATA 3
6	⋮
7	REFERENCE MESH DATA n

FIG.10

REFERENCE MESH DATA

1	MESH CODE
2	MESH IDENTIFICATION INFORMATION
3	CORE MESH IDENTIFICATION INFORMATION
4	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION
5	OFFSET INFORMATION
6	CONNECTION DATA
7	PARTIAL RESTRICTION DATA

FIG.11

CONNECTION DATA PORTION

1	SUBJECT NODE INFORMATION 1
2	ADJACENT NODE INFORMATION 1
3	SUBJECT NODE INFORMATION 2
4	ADJACENT NODE INFORMATION 2
5	⋮
6	SUBJECT NODE INFORMATION n
7	ADJACENT NODE INFORMATION n

FIG.12

CONNECTION DATA PORTION (OVERLAP MESH)

1	SUBJECT NODE INFORMATION 1	SUBJECT NODE ID NO.=0 INVALID NODE FLAG=OFF
2	ADJACENT NODE INFORMATION 1	
3	SUBJECT NODE INFORMATION 2	SUBJECT NODE ID NO.=1 INVALID NODE FLAG=OFF
4	ADJACENT NODE INFORMATION 2	
5	SUBJECT NODE INFORMATION 3	SUBJECT NODE ID NO.=2 INVALID NODE FLAG=ON
6	SUBJECT NODE INFORMATION 4	SUBJECT NODE ID NO.=3 INVALID NODE FLAG=ON
7	SUBJECT NODE INFORMATION 5	SUBJECT NODE ID NO.=4 INVALID NODE FLAG=OFF
8	ADJACENT NODE INFORMATION 5	
9	⋮	
10	SUBJECT NODE INFORMATION 2049	SUBJECT NODE ID NO. = 2048 INVALID NODE FLAG = OFF
11	ADJACENT NODE INFORMATION 2049	

9/16

FIG.13

MESH SET DATA

1	NUMBER OF REFERENCE MESHES
2	OFFSETS TO AND SIZES OF REFERENCE MESH DATA
3	REFERENCE MESH DATA 1
4	REFERENCE MESH DATA 2
5	REFERENCE MESH DATA 3
6	:
7	REFERENCE MESH DATA n

FIG.14

REFERENCE MESH DATA

1	MESH CODE
2	MESH IDENTIFICATION INFORMATION
3	CORE MESH IDENTIFICATION INFORMATION
4	OFFSET INFORMATION
5	LEVEL CORRESPONDENCE TABLE DATA

10/16

FIG.15

LEVEL CORRESPONDENCE DATA PORTION

1	LEVEL CORRESPONDENCE DATA HEADER
2	NUMBER OF CORRESPONDING LEVELS
3	CORRESPONDENCE INFORMATION 1
4	CORRESPONDENCE INFORMATION 2
5	CORRESPONDENCE INFORMATION 3
6	⋮
7	CORRESPONDENCE INFORMATION n

FIG.16

CORRESPONDENCE INFORMATION

1	SUBJECT NODE CORRESPONDENCE INFORMATION
2	ADJACENT NODE #1 INFORMATION
3	ADJACENT NODE #2 INFORMATION
4	ADJACENT NODE #3 INFORMATION
5	⋮
6	ADJACENT NODE #m INFORMATION

FIG.17

SUBJECT NODE CORRESPONDENCE INFORMATION

1	NUMBER OF ADJACENT NODES
2	SUBJECT LEVEL INFORMATION (SUBJECT LEVEL NODE NUMBER)
3	LOWER-ORDER LEVEL INFORMATION 1
4	LOWER-ORDER LEVEL INFORMATION 2
5	⋮
6	LOWER-ORDER LEVEL INFORMATION j

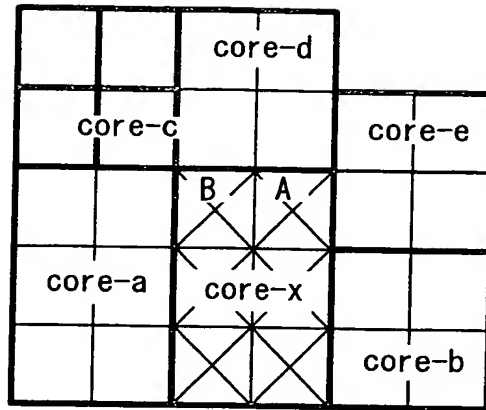
FIG.18

ADJACENT NODE INFORMATION

1	SUBJECT LEVEL ADJACENCY INFORMATION
2	LOWER-ORDER LEVEL ADJACENCY INFORMATION 1
3	LOWER-ORDER LEVEL ADJACENCY INFORMATION 2
4	⋮
5	LOWER-ORDER LEVEL ADJACENCY INFORMATION k

FIG.19

11/16



(a)

REFERENCE MESH DATA A

1	MESH CODE	
2	MESH IDENTIFICATION INFORMATION	CORE MESH or OVERLAP MESH
3	CORE MESH IDENTIFICATION INFORMATION	
4	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (UPPER SIDE MESH)	ROUTE INFORMATION LIST DATA: NO (core-d)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (LOWER SIDE MESH)	ROUTE INFORMATION LIST DATA: NULL (WITHIN SUBJECT CORE)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (LEFT SIDE MESH)	ROUTE INFORMATION LIST DATA: NULL (WITHIN SUBJECT CORE)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (RIGHT SIDE MESH)	ROUTE INFORMATION LIST DATA: YES (core-e)
5	OFFSET INFORMATION	
6	CONNECTION DATA	
7	PARTIAL RESTRICTION DATA	

(b)

REFERENCE MESH DATA B

1	MESH CODE	
2	MESH IDENTIFICATION INFORMATION	CORE MESH or OVERLAP MESH
3	CORE MESH IDENTIFICATION INFORMATION	
4	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (UPPER SIDE MESH)	ROUTE INFORMATION LIST DATA: NO (core-d)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (LOWER SIDE MESH)	ROUTE INFORMATION LIST DATA: NULL (WITHIN SUBJECT CORE)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (LEFT SIDE MESH)	ROUTE INFORMATION LIST DATA: YES (core-a)
	ROUTE INFORMATION LIST IDENTIFICATION INFORMATION (RIGHT SIDE MESH)	ROUTE INFORMATION LIST DATA: NULL (WITHIN SUBJECT CORE)
5	OFFSET INFORMATION	
6	CONNECTING AREA DATA	
7	PARTIAL RESTRICTION DATA	

(c)

FIG. 20

HIGHER-ORDER LEVEL OVERLAP MESH

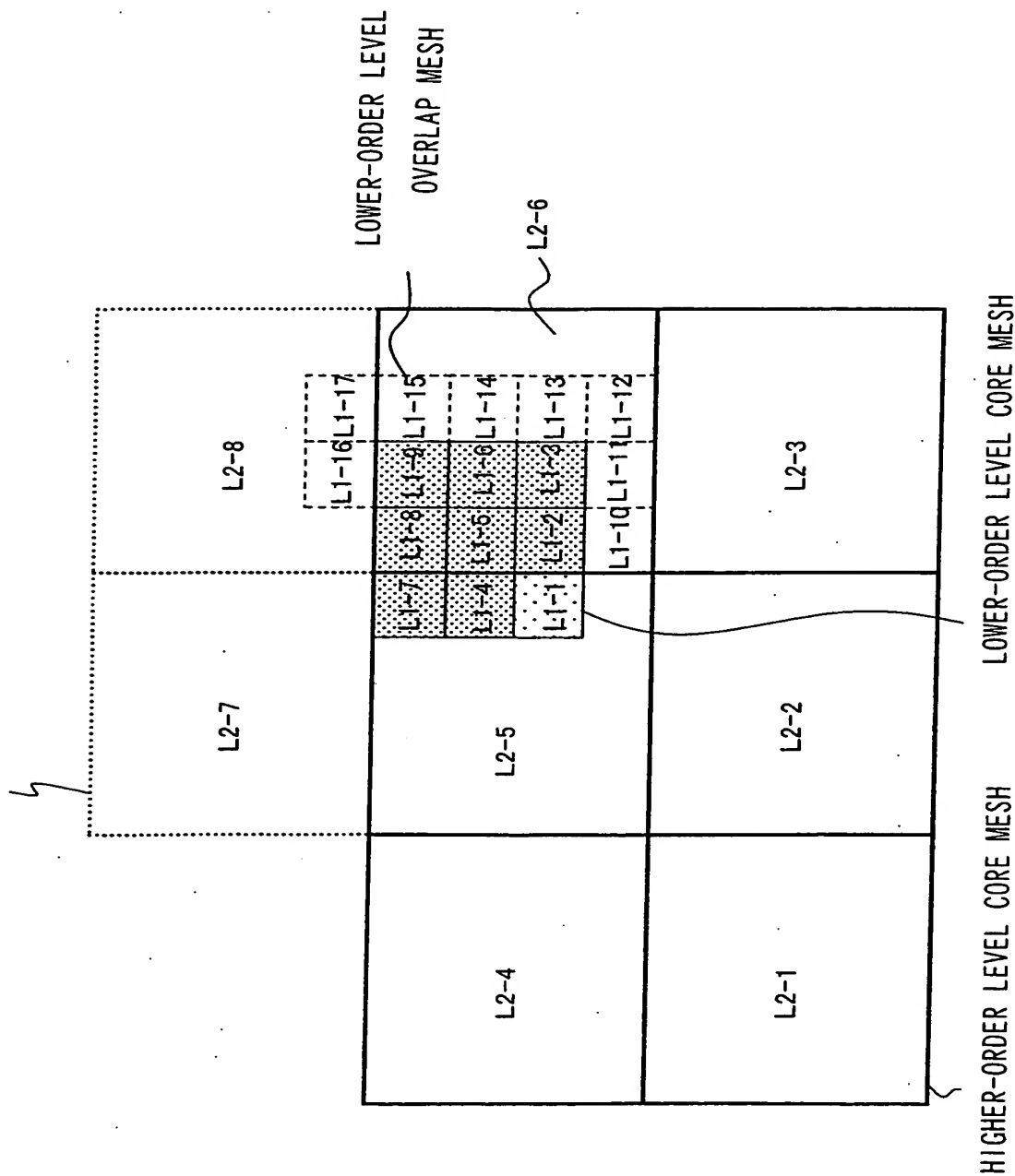
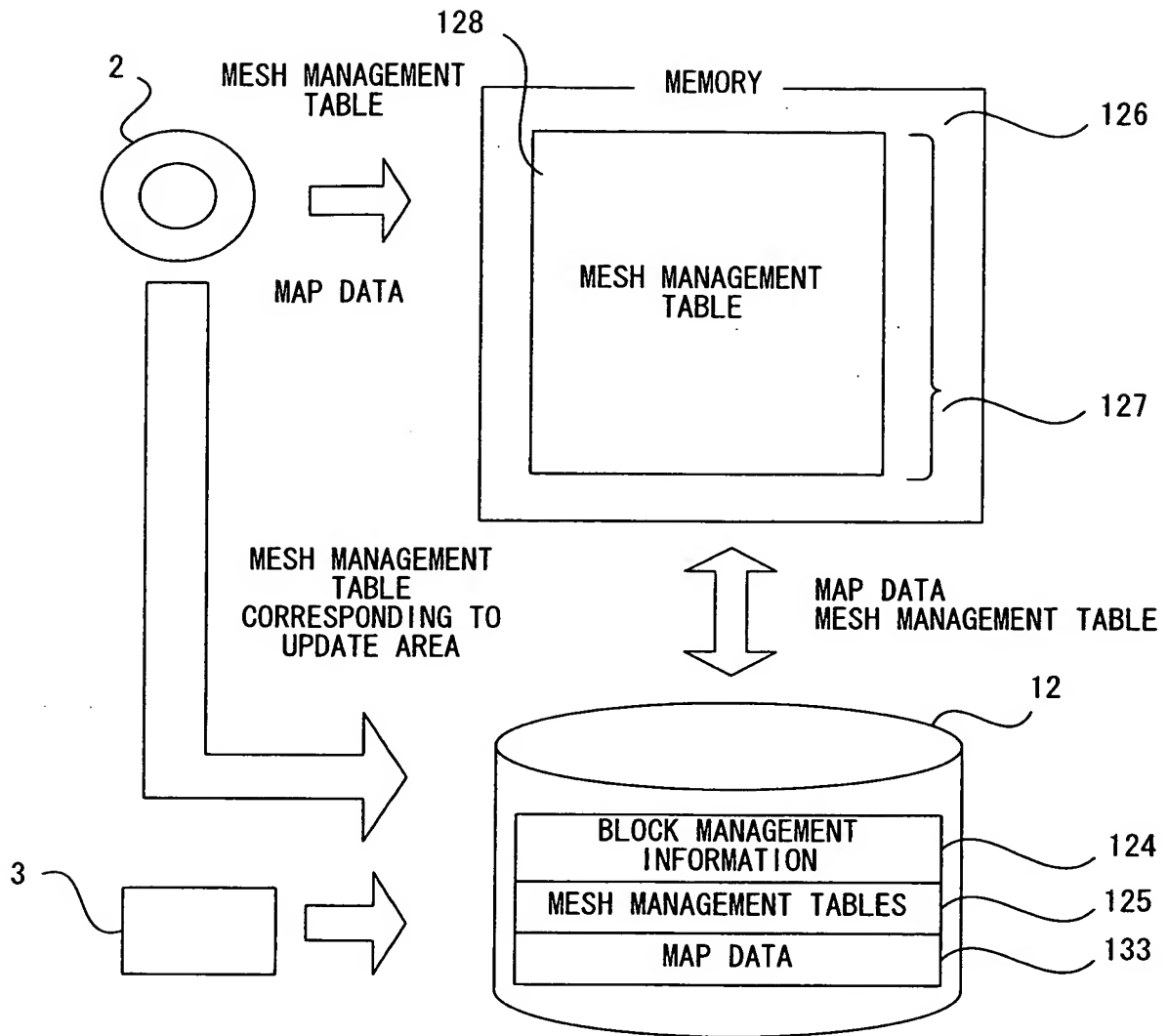


FIG.21



14/16

FIG.22

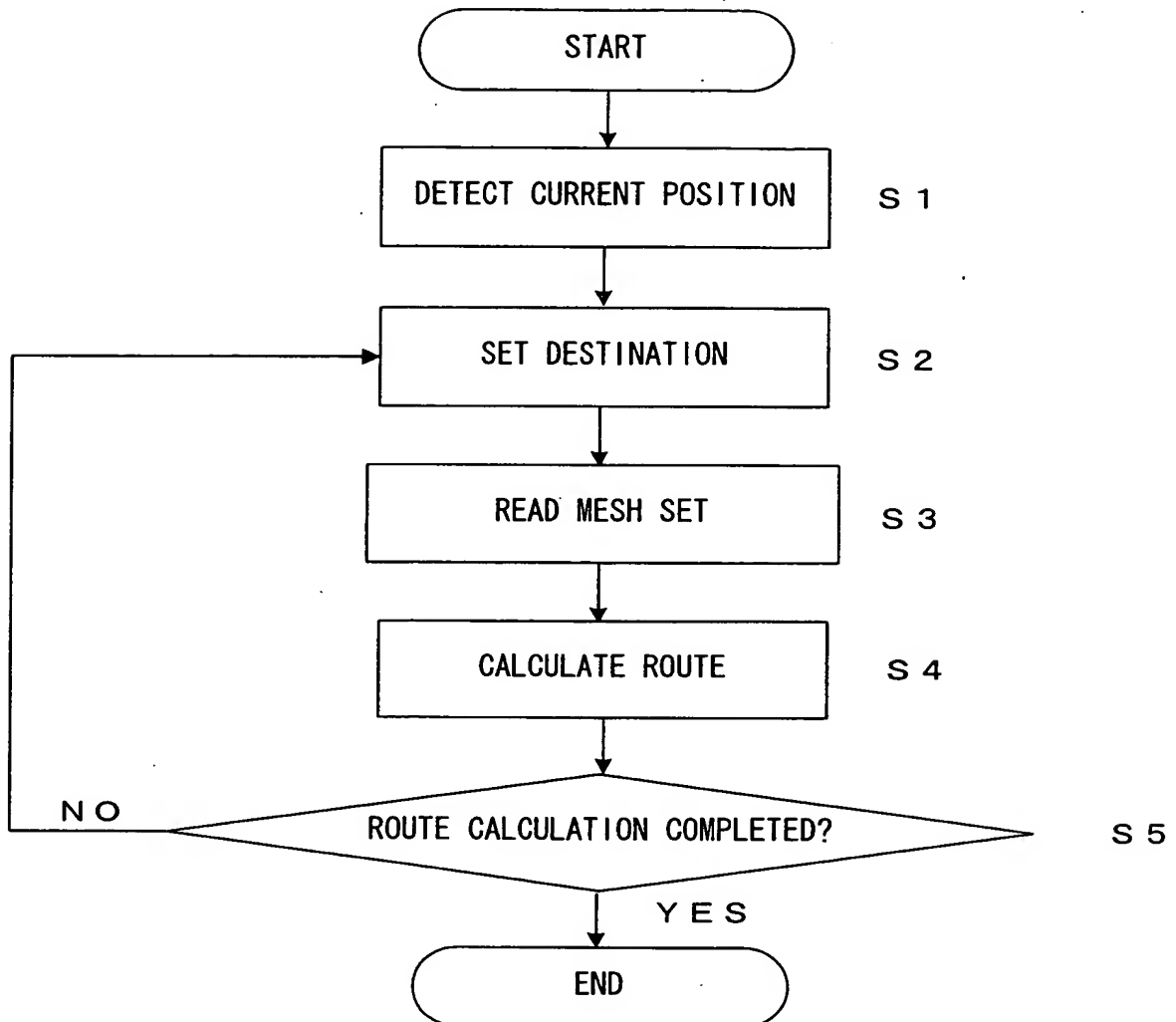


FIG.23

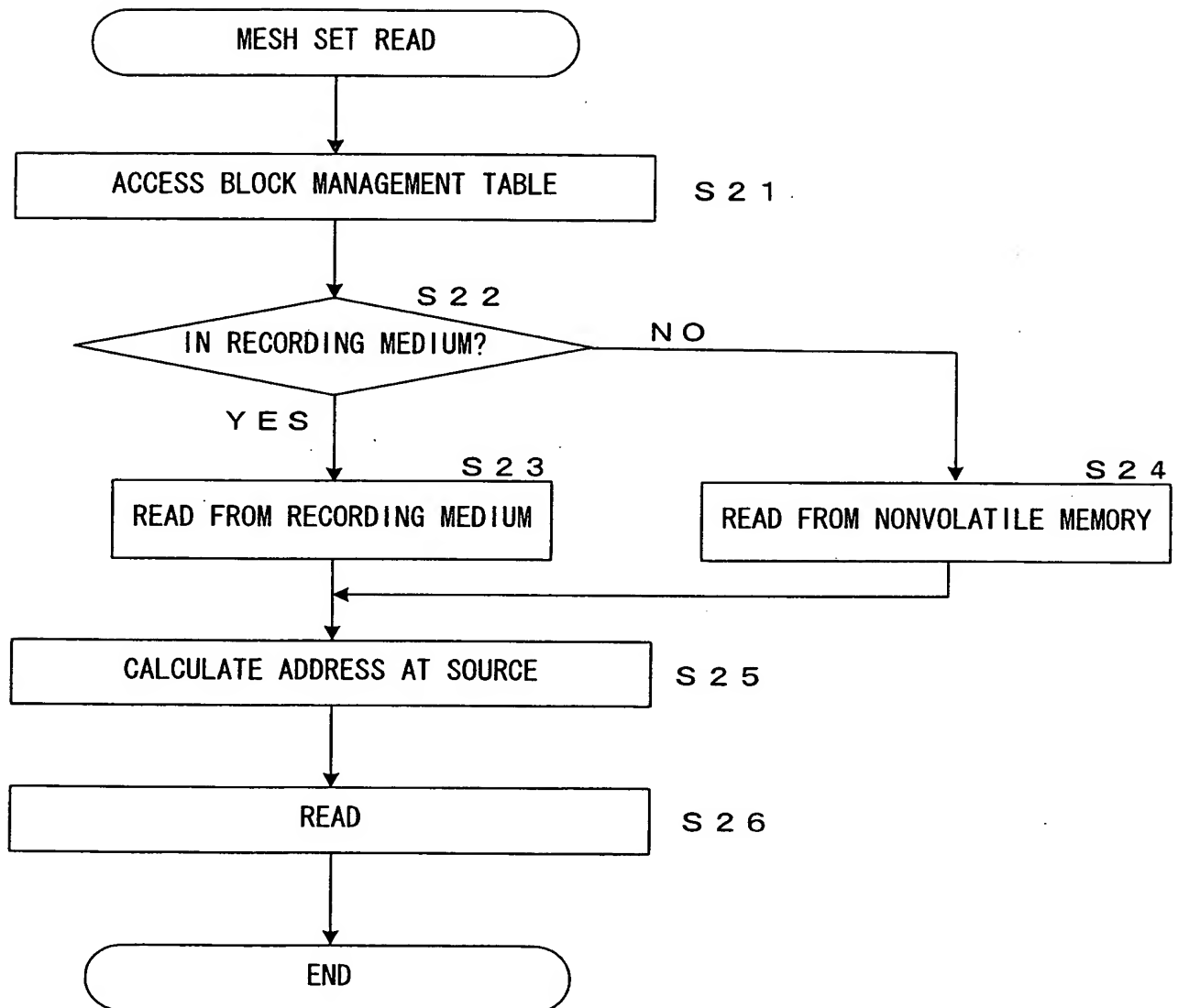


FIG. 24

